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EXAMINER	
PATEL, JAY P	
ART UNIT	**PAPER NUMBER**
2666	

DATE MAILED: 08/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/933,035	BRANDEN, SCOTT	
	Examiner	Art Unit	
	Jay P. Patel	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on 5/11/2005.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-36 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-3,6-17,19-25,27-32 and 36 is/are rejected.

7)☒ Claim(s) 4,5,18,26 and 33-35 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 11 May 2005 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-3, 6-17, 19-25, 27-32 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Arnaud et al. (U.S. Patent 6650662 B1).

2. In regards to claim 1, Arnaud discloses A method for relaying signaling tones in a communication signal across a network, comprising the steps of:

Pre-detecting said tones (column 5 lines 25-35 and Figure 2, DTMF detector 203). An incoming signal is sent in parallel to a DTMF detector and a filter for removing DTMF content according to the pre-detected DTMF frequencies;

Processing said communication signal to invalidate said tones in response to said tone pre-detection (column 5 lines 36-41 and figure 2, filter 201). Before validating the DTMF signals, the output of the DTMF detector is filtered to remove the value of the second group frequency, thus invalidating that tone;

Forwarding said processed communication signal across said network (column 5 lines 43-52 and figure 2, transmit interface 205). The transmit interface handles

compressed voice traffic and the output of the DTMF detector. The transmit interface then assembles the packets and sends it to the destination node;

Validating at least one of said tones (column 5 lines 25-27 and figure 2, DTMF detector 203). One of the functions of the DTMF detector is to validate the DTMF signals; and

Forwarding tone-on signals across said network in response said validation (column 9 lines 45-50 and figure 2 DTMF detector 203). The DTMF detector provides the transmit interface 205 with information relating the type of DTMF signal; one of which is a tone-on signal.

3. In regards to claim 2, Arnaud discloses that the DTMF coding defines 16 distinct symbols that are encoded using a matrix of frequencies (column 6 lines 1-15 and table 1 in column 6). There is a low frequency band (697, 770, 852 and 947 Hz) and a high frequency band (1209, 1336, 1477 and 1633 Hz).

4. In regards to claim 3, the DTMF detector is divided into three parts (column 7, lines 19-31). One branch is for processing the four low group frequencies. Furthermore, each branch is divided into four sub-branches; where each sub-branch consist of a band pass filter, a wave rectifier and a low pass filter (column 8, lines 48-55). If there is a branch to process the low group of frequencies and another branch for processing the high group of frequencies, it is inherent that in order to process one of the low groups of frequencies, all the other frequencies including the high frequencies will be filtered out.

5. In regards to claim 6, Arnaud discloses a voice compression system that is coupled to the transmit interface unit (column 5, lines 49-52 and figure 2 voice compressor 204 and transmit interface 205). Since the transmit interface in conjunction with the voice compression system assemble the voice traffic and transmit toward the destination node, the encoding process claimed in claim 6 is inherent.

6. In regards to claim 7, Arnaud discloses that the DTMF detector detects frequencies or energy levels, which refer to signal components at the frequencies or having particular energy-levels at the particular frequencies (column 6, lines 34-47). Furthermore, the DTMF detector must detect DTMF signals in a predefined range of energy levels (column 6, lines 48-51). Thus, it is inherent that a characteristic of the tone (energy-level) is determined and since a range of energy levels is defined, a comparison is made with a pre-determined threshold.

7. In regards to claim 8, Arnaud discloses that the DTMF Detector must be able to detect DTMF signals when the two frequencies are received at different power levels. For example, the second frequency may be received at a different power level than the first frequency (column 6, lines 52-57).

8. In regards to claim 9, Arnaud discloses that the DTMF detector is designed to detect frequencies with a tolerance of 1.8% of their nominal value (column 6, lines 42-43).

9. In regards to claim 10, the DTMF detector recognizes the duration of the DTMF signals in order to guard against false signal indications (column 6 lines 62-66 and figure 2 DTMF decoder 203).

10. In regards to claim 11, Arnaud discloses a tone detector for detecting DTMF signals and validating the DTMF signals (column 5 lines 25-28 and figure 2, DTMF detector 203). Arnaud also discloses a filter to remove a frequency among the pre-detected DTMF frequencies to avoid any double DTMF detection (column 5 lines 228-30 and figure 2, filter 201). Therefore any double DTMF tone will be invalidated in the filtering process. Arnaud also discloses a compression system and a transmit interface for compressing and assembling voice and pure DTMF packets for transmission to the destination node (column 5 lines 30-35 and lines 47-52 and figure 2 compressor 204 and interface 205). The combination of the compression and interface units is an encoding system to encode processed voice traffic.

11. In regards to claim 12, Arnaud discloses that the DTMF coding defines 16 distinct symbols that are encoded using a matrix of frequencies (column 6 lines 1-15 and table 1 in column 6). There is a low frequency band (697, 770, 852 and 947 Hz) and a high frequency band (1209, 1336, 1477 and 1633 Hz).

12. In regards to claim 13, Arnaud discloses a processing system in the DTMF detector for processing high group frequencies. This branch of the DTMF detector includes a band stop filter (column 7, lines 24-35 and figure 3, band stop filter 301).

13. In regards to claim 14, Arnaud discloses a processing system in the DTMF detector for processing low group of frequencies. As in the frequency branch, the low frequency processing branch also includes a band stop filter (column 7, lines 24-38 and figure 3, band stop filter 302).

14. In regards to claim 15, the DTMF detector forwards all the features essential for reconstructing the DTMF signal at the destination to the transmit interface unit (column 5, lines 43-47 and figure 2, DTMF detector 203 and transmit interface unit 205); one of the essential characteristics that the DTMF detector passes on to the transmit interface unit is the DTMF type variable, one of which could be a tone on value (column 9, lines 45-50).

15. In regards to claim 16, the DTMF detector recognizes signals whose duration has exceeds the minimum expected value (column 6, lines 62-66). Also in regards to claim 16, one of the essential characteristics that the DTMF detector passes on to the transmit interface unit is the DTMF type variable, one of which could be a tone on value (column 9, lines 45-50).

16. In regards to claim 17, Arnaud discloses a compression system and a transmit interface for compressing and assembling voice and pure DTMF packets for transmission to the destination node (column 5 lines 30-35 and lines 47-52 and figure 2 compressor 204 and interface 205). The combination of the compression and interface units is an encoding system to encode processed voice traffic.

17. In regards to claim 19, Arnaud discloses a telephone set linked to a private branch exchange that is connected to a source node (column 1, lines 3-8 and figure 1 telephone set 100, PBX 101 and source node 102). The source node contains the DTMF detector 203, compression system 204 and the interface unit 205 disclosed in regards to the claims above (column 5, lines 24-36 and figure 2). The source node is viewed as a signals processor that carries out the detection, validation/invalidation and encoding process described in regards to the claims above.

18. In regards to claim 20, Arnaud discloses that the DTMF coding defines 16 distinct symbols that are encoded using a matrix of frequencies (column 6 lines 1-15 and table 1 in column 6). There is a low frequency band (697, 770, 852 and 947 Hz) and a high frequency band (1209, 1336, 1477 and 1633 Hz).

19. In regards to claim 21, Arnaud discloses a processing system in the DTMF detector for processing high group frequencies. This branch of the DTMF detector includes a band stop filter (column 7, lines 24-35 and figure 3, band stop filter 301).

20. In regards to claim 22, Arnaud discloses a processing system in the DTMF detector for processing low group of frequencies. As in the frequency branch, the low frequency processing branch also includes a band stop filter (column 7, lines 24-38 and figure 3, band stop filter 302).

21. In regards to claim 23, the DTMF detector forwards all the features essential for reconstructing the DTMF signal at the destination to the transmit interface unit (column 5, lines 43-47 and figure 2, DTMF detector 203 and transmit interface unit 205); one of

the essential characteristics that the DTMF detector passes on to the transmit interface unit is the DTMF type variable, one of which could be a tone on value (column 9, lines 45-50).

22. In regards to claim 24, the DTMF detector recognizes signals whose duration has exceeds the minimum expected value (column 6, lines 62-66). Also in regards to claim 16, one of the essential characteristics that the DTMF detector passes on to the transmit interface unit is the DTMF type variable, one of which could be a tone on value (column 9, lines 45-50).

23. In regards to claim 25, Arnaud discloses a compression system and a transmit interface for compressing and assembling voice and pure DTMF packets for transmission to the destination node (column 5 lines 30-35 and lines 47-52 and figure 2 compressor 204 and interface 205). The combination of the compression and interface units is an encoding system to encode processed voice traffic.

24. In regards to claim 27, Arnaud discloses a tone detector for detecting DTMF signals and validating the DTMF signals (column 5 lines 25-28 and figure 2, DTMF detector 203). Arnaud also discloses a filter to remove a frequency among the pre-detected DTMF frequencies to avoid any double DTMF detection (column 5 lines 228-30 and figure 2, filter 201). Therefore any double DTMF tone will be invalidated in the filtering process. Arnaud also discloses a compression system and a transmit interface for compressing and assembling voice and pure DTMF packets for transmission to the destination node (column 5 lines 30-35 and lines 47-52 and figure 2 compressor 204

and interface 205). The combination of the compression and interface units is an encoding system to encode processed voice traffic.

25. In regards to claim 28, Arnaud discloses that the DTMF coding defines 16 distinct symbols that are encoded using a matrix of frequencies (column 6 lines 1-15 and table 1 in column 6). There is a low frequency band (697, 770, 852 and 947 Hz) and a high frequency band (1209, 1336, 1477 and 1633 Hz).

26. In regards to claim 29, Arnaud discloses a processing system in the DTMF detector for processing high group frequencies. This branch of the DTMF detector includes a band stop filter (column 7, lines 24-35 and figure 3, band stop filter 301).

27. In regards to claim 30, Arnaud discloses a processing system in the DTMF detector for processing low group of frequencies. As in the frequency branch, the low frequency processing branch also includes a band stop filter (column 7, lines 24-38 and figure 3, band stop filter 302).

28. In regards to claim 31, the DTMF detector forwards all the features essential for reconstructing the DTMF signal at the destination to the transmit interface unit (column 5, lines 43-47 and figure 2, DTMF detector 203 and transmit interface unit 205); one of the essential characteristics that the DTMF detector passes on to the transmit interface unit is the DTMF type variable, one of which could be a tone on value (column 9, lines 45-50).

29. In regards to claim 32, Arnaud discloses a compression system and a transmit interface for compressing and assembling voice and pure DTMF packets for

transmission to the destination node (column 5 lines 30-35 and lines 47-52 and figure 2 compressor 204 and interface 205). The combination of the compression and interface units is an encoding system to encode processed voice traffic.

30. In regards to claim 36, Arnaud discloses a filter to remove a frequency among the pre-detected DTMF frequencies to avoid any double DTMF detection (column 5 lines 228-30 and figure 2, filter 201). Therefore any double DTMF tone will be invalidated in the filtering process and it is inherent that the filtered signal will be buffered after removing the DTMF components. Arnaud also discloses a compression system and a transmit interface for compressing and assembling voice and pure DTMF packets for transmission to the destination node (column 5 lines 30-35 and lines 47-52 and figure 2 compressor 204 and interface 205).

Allowable Subject Matter

31. Claims 4-5, 18, 26 and 33-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

32. Applicant's arguments filed May 11th, 2005 have been fully considered but they are not persuasive.

33. On page 13, applicant argues that the filter 201 disclosed by Arnaud, can be said to operate in response to tone pre-detection as called for in clam 1. However, the examiner respectfully disagrees; in column 5 lines 25-30, Arnaud states that the incoming signal is presented to a filter to remove a frequency among the *pre-detected*

(emphasis added) DTMF frequencies. Therefore, the examiner maintains that filter operates in response to tone pre-detection.

Furthermore, on page 13, the applicant argues that Arnaud does not distinguish a DTMF signal form ordinary voice data to invalidate DTMF tones. However, the examiner respectfully disagrees. In column 5, lines 42-52, Arnaud states that "after DTMF detector has determined that the DTMF signal is a true DTMF signal and not voice traffic, all the features essential for reconstructing the DTMF signal at the destination, are forwarded to the Transmit Interface." If the DTMF detector has determined DTMF signal is a true DTMF signal and not voice traffic then it clearly distinguishes a DTMF signal from ordinary voice to invalidate DTMF tones since the filter 201, removes any double DTMF tones thus invalidating the double tone (see column 5, lines 25-30).

In further regards, on page 14, the applicant argues that Arnaud disclosure of pre-detecting DTMF tones is done to avoid double DTMF detection. While the examiner agrees with the applicant, the examiner also maintains that it is well known in the art that the double detection of DTMF tones can cause delay.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay P. Patel whose telephone number is (571) 272-3086. The examiner can normally be reached on M-F 9:00 am - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPP 8/4/05
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DANG TON
PRIMARY EXAMINER